Preconditioning the Home Raised Highland Calf

by Pat White, DVM

Statistics show that preconditioning of feeder calves, prior to sale and movement, can improve profitability during the finishing phase. Pre-conditioned calves perform better as feeders, and therefore are worth a premium to the finisher. Calves that are going to a show or a sale will also greatly benefit from a preconditioning program. Everybody talks about preconditioning, but what exactly does the term mean?

Preconditioning involves using several different management strategies to accomplish several goals: minimize stress during the weaning period, train calves to eat from feed bunks, hay feeders and drink from water troughs and vaccinate calves as appropriate. Preconditioning may also include castration of bull calves and dehorning or tipping of the horns. The ultimate goal of preconditioning is to maximize the likelihood of good health and gain for calves until slaughter; ensuring maximum profit for both the cow/calf operator and the finisher. While generally used for calves destined for the feedlot, all the principles of preconditioning apply equally to maximizing health in replacement heifers and bull prospects.

In the case of animals changing ownership, identification of individual animals or specific groups of animals becomes important when providing proof of preconditioning. Unique ear tags are the most common form of identification for steers and beef heifers but tattoos and brands are also acceptable. As an aside, it also will become virtually mandatory for new COOL (country of origin labeling) regulations. It is important to note that COOL has not yet been fully implemented, and it is not yet known (at the time of writing this article) what types of identification will be acceptable proof of an animal born and raised in the USA. In the proposed guidelines, producers using the voluntary NAIS (National Animal Identification System) with official ear tags (RFID – Radio-Frequency Identification) will have a definite advantage; it appears that slaughter facilities will be able to use those official tags as evidence of country-of-origin.

Preconditioning aids in maintaining a strong immune system throughout the life of the animal. First and foremost, calves should receive adequate amounts of high quality colostrum when first born. Failure to receive adequate amounts of colostrum not only adversely affects the health of the newborn calf but also can result in 3X the likelihood of requiring treatment for respiratory disease during the feedlot period.

Deworming is an important part of any preconditioning program. Calves do not become immune to intestinal parasites until at least a year after weaning. Weaned calves are very susceptible to the effects; with heavy worm burdens causing reduced appetites and decreased ability to respond to vaccination. Ideally, calves should be dewormed 2-6 weeks prior to weaning; thus limiting damage to the intestinal system, ensuring maximum growth rate during the final weeks prior to weaning. Calves can be dewormed instead at weaning, or 2-3 weeks following weaning but treatment prior to weaning is ideal.

A group of tagged weanlings. Having easily read eartags are important when preconditioning and also help greatly when showing animals to prospective buyers. Photo courtesy of Black Watch Farm

Calves should be weaned at least 45 days prior to movement off the farm. They should be familiar with the area in which they will be weaned; unfamiliar surroundings contribute to stress. All this requires is giving calves access to the weaning area for a few days prior to actual weaning. The 45 days allows plenty of time for complete weaning and booster vaccinations prior to sale to maximize later health benefits.

Virtually any practice that reduces stress at the time of weaning and the first few days after weaning reduces the risk of health problems, improves post-weaning gains and minimizes wear and tear on both facilities and the people involved in handling the cattle. Calves should be confined to a corral, dry-lot or pasture when weaned. It is crucial that the area be very well fenced. There is nothing worse, having personal experience in the matter, than going through a day of separating cows from their calves, tucking everyone in the for night, including yourself, and waking up in the morning to a break-out through a weak area in the fence and having to repeat the whole episode after the fence repair. This prolongs the stress to the calves, the cows, and no doubt contributes to high levels of stress (and blood pressure) in the operator.

Ideally the weaning corral needs to be well designed and solid; this will permit the cows to stay immediately adjacent to the calves for a few days. The construction must be adequate to prevent the calves from sticking their heads through the fence and nursing on the cow. Again, this only prolongs the stress on the calves once the bond is completely severed. The ability of the calf to see and touch noses with its dam seems to reduce the stress on calves, although I am not convinced that the cows forget their calves quite as quickly in this method.

Cows can be separated from their calves and moved to distant pastures where they can neither see nor hear their calves. This is possibly the least stressful to the cow but not the calf. A third method and least ideal, is to move the cows to a pasture where they can still hear and see their calves. While this will effectively wean calves, it seems more stressful on both parties. It is also potentially the hardest on fences. Cows can be particularly aggressive in seeking methods to reunite with their calves.

Nose to nose weaning gets the nod as the least stressful method for the calves and can be done either in a corral or in a pasture situation. Pasture allows both cow and calf to continue grazing, the calves on high quality forage they are already accustomed to eating. There is no learning curve for feed but if utilizing electric fences, the calves must be trained to electric wire to know what it is

least stressful to the cow but not the calf. A third method and least ideal, is to move the cows to a pasture where they can still hear and see their calves. While this will effectively wean calves, it seems more stressful on both parties. It is also potentially the hardest on fences. Cows can be particularly aggressive in seeking methods to reunite with their calves.

Nose to nose weaning gets the nod as the least stressful method for the calves and can be done either in a corral or in a pasture situation. Pasture allows both cow and calf to continue grazing, the calves on high quality forage they are already accustomed to eating. There is no learning curve for feed but if utilizing electric fences, the calves must be trained to electric wire to know what it is all about.

The preconditioning program also needs to address the final destination of the calves. If heading to a feedlot, (or any location that demands supplemental feed in one form or another) it is imperative that calves learn to eat from a feed bunk. Calves have to transition from a milk diet to one based solely on forage or forage and concentrate. Calves acclimated to feed bunks and water troughs seem to go on feed faster once at their new location.

Training calves to the feed bunk and water trough is not a difficult task but it does require some preplanning. The calves should have their fill of hay for a few hours prior to giving them access to water. Often cattle will drink faster if they can hear water, so a temporary drip system can be very useful if possible. Small water troughs that fill frequently with cold fresh water are more enticing than a large tank full of lukewarm water. Feeders should be positioned at a right angle to the fence line, so that as calves pace the fence line for their mothers, they will find the feed.

Feeders of any sort absolutely must have adequate space to prevent crowding. There should be enough space that all the animals can eat at the same time with out being jostled and pushed by their contemporaries. This is critical for access to hay or haylage as well. For the Highland breeder, with small numbers of calves, it may be tempting to keep a few older animals in with the weanlings for whatever purpose; access for treatment, hoof trimming or preparation for show. This is a poor idea, as the older animals will monopolize the feed area, play king of the hill, block access to waterers just by the benefit of their size (although sometimes I am convinced that boss animals block access to water just because they can) and disrupt what should be a stress free environment.

Nutrition is very important in the preconditioning period. Calves need to continue to grow at a similar gain (or higher) as when they were nursing. My calves on milk and pasture, usually gain between 1.5 and 2.5 pounds per day, without any supplementation. They come off their mothers in smooth, rounded condition, with obvious muscular development across the topline and hips. You want them to continue in this body condition. Rations for weaned calves should be balanced with adequate levels of protein and energy; County Extension Offices can be very useful in helping you determine exactly what supplements are necessary based on your own feedstuffs. ***Poor quality forage is not adequate feed for growing calves even if they are given all they can eat.*** If your hay quality is in question, have it evaluated for nutrients and then supplement with what ever is necessary to balance the ration for growth. Calves require access to clean water and mineral supplements at all times.

Bulls are ideally castrated well before the weaning period, to minimize stress. The older the bull, the more stressful the castration. The larger the animal, the more rugged the restraint facility required to perform the castration. Calves castrated as newborns (less than 36 hours old) seem to suffer the least set-back from the procedure. Regardless of age, avoid castration during fly season and on wet, muddy days where calves may lie down and contaminate their surgery site. Some producers may actually want to feed out bulls because of their more rapid natural growth rate and fat-to-lean ratio. These bulls are without a doubt more difficult to manage due to infighting, and they obviously cannot be commingled with heifers unless the heifers are spayed or treated with hormones to prevent them from coming into heat.

Dehorning may be a preconditioning requirement, depending on the destination of your calves. If you know your calves must be dehorned it should be performed at as young an age as possible, preferably at less than 3 weeks of age. Caustic paste, applied to the horn buttons (after cutting or shaving the hair around the horn button) is probably the least traumatic for the calf. Follow directions carefully, remembering that the older the animal, the larger the horn, the greater the stress and risk of infection. Weaned calves should be totally healed from both castration and dehorning in the preconditioning period.

Vaccinations are an important part of the preconditioning management. Necessary vaccinations may be spelled out by the particular sale management or feedlot operator, or it may be the vaccinations you as the owner desire for your replacements. Wherever your calves may be destined, necessary vaccinations should be given, and booster doses completed prior to leaving the farm. Initial vaccinations can be given 2-4 weeks prior to weaning and then boostered at weaning or shortly thereafter. An alternate method is to give the first vaccine at the time of weaning but it makes more sense to stimulate immunity prior to bunching and congregation of large numbers of calves in a small area. Bare minimum requirements for vaccination include a five-way viral vaccine for IBR, BVD, PI3 and BRSV. (BVD has 2 strains included, thus the 5, or the 5-way.) When vaccinating calves that will still be nursing on their mothers, follow label directions as to safety for pregnant cows. Other vaccinations that may be needed include a 7 or 8-way clostridial toxoid (for tetanus, blackleg, malignant edema and others), Pasteurella haemolytica (renamed Mannheimia haemolytica) and/or Pasteurella multocida (both part of the shipping-fever complex along with the above named viral vaccines) and Haemophilus somnus. Replacement heifers may require Leptospirosis and Brucellosis vaccinations as well. My personal philosophy on multiple vaccinations is to give no more than one viral combination with one gram-negative bacterin. Cattle seem more likely to react to the gram-negative bacterial proteins found in the bacterins for Leptospirosis, Brucellosis, H. somnus, Mannheimia and Pasteurella. I personally do not vaccinate for every known disease at the same time. This mandates that vaccinations be carefully staggered, with products being used no closer than 2-3 weeks from the last vaccinations. Overloading the immune system with multiple products may precipitate allergic-type (and sometimes fatal) reactions in susceptible individuals. Of course, allergic reactions can follow even individual disease vaccinations as well, and calves should be monitored closed immediately following any injections.

Preconditioning for the beef market also includes adherence to the principles of the Beef Quality Assurance Program. This entails giving subcutaneous injections if at all possible (choose your vaccines accordingly), limiting vaccines (both subcutaneous and intramuscular) to the muscles of the neck area, giving only medications approved for use in cattle and at label dosages, administering no more than 10 cc of any product in one location, changing needles frequently, and adhering strictly to slaughter withdrawal information. Written health records for individuals or groups are mandatory, and should include products used, route given, date given, volume given and appropriate withdrawal period for slaughter.

Preconditioned animals should be healthy, adapted to feed bunks, water troughs, castrated and dehorned if necessary, fully healed and gaining weight when they finally reach their destination, whether in a feedlot or a pasture. Such animals should command a premium that more than compensates for the added cost of the preconditioning program. The key to success lies in finding a market that is willing to pay such a premium.